

SLWT DISPLAY CSCI

REQUIREMENTS REVIEW

MAY 29,1997

1. SLWT DISPLAY DEVELOPMENT

1.1 SLWT Display Development Introduction

1.1.1 SLWT Display Development Overview

The SLWT Display Development CSCI is building a set of prototype user interface displays for the CLCS. The Display Development team consists of console engineers and S/W engineers working together to define the HCI of

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the CLCS. These displays are being built to support the SLWT Cryogenic Tanking Test and provide the user and management communities a first look at the new capabilities of CLCS. Lessons learned from developing these displays and user community feedback from evaluating these displays will determine the display requirements for the fully operational CLCS.

1.1.2 SLWT Display Development Operational Description

Displays will be developed to monitor existing GSE and vehicle data and SLWT unique data during the cryogenic vehicle loading test. These displays are being built with the SL-GMS dynamic data visualization tool - a software tool that is commercially available and is being used to demonstrate how the new user interface to CLCS will be developed. The displays will also showcase the new, emerging capabilities of CLCS.

1.2 SLWT Display Development Specifications

1.2.1 SLWT Display Development Ground Rules

- Assumptions
 - SLWT Displays are intended as a CLCS demonstration tool for user/management evaluation and feedback
 - LCC-X will be utilized as a demonstration area for user and management evaluation of Launch countdowns and tanking tests after Redstone Delivery
 - If decision making from the GMS display is desired - capability would be provided for a CLCS console in the GMS data area (LCC 2P20) for MSFC users
- CLCS Products Required
 - SL-GMS software to run on all platforms
 - Data Fusion/Data Health
 - LCC-X HCI Workstation with OIS and OTV
 - Consolidated Data Stream
 - Data play back
 - System Viewer
 - Reliable Messages
- Limitations
 - No command capability
 - SLWT Displays are for demonstration purposes only and may not be updated after SLWT tanking test (May '98)

1.2.2 SLWT Display Development Functional Requirements

Displays will be built for the following systems:

1. LH2
2. LO2
3. MPS
4. SSME

5. HGDS
6. SURFICE (Ice Team)
7. Pinch Loads/Special Instrumentation (GMS ET strain measurement and MPS drag-on temperature measurement)

In building these displays the following will be realized:

- Displays built utilizing COTS S/W Product
 - Evaluate the COTS tool for its appropriateness
 - Keep time usage metrics to scale up future display development resources
 - Develop a library of objects that will become building blocks for future displays
- Utilize wide variety of display options for User evaluation of HCI
 - Methods of data input (slide bars, toggle buttons, keypads, etc.)
 - Methods of data display
 - Wide range of graphic capability (from GOAL like to futuristic)
 - Different font and point size data display

OPTION	LOX	LH2	MPS	SSME	HGDS	SURFIC E	GMS
OUTPUT							
DIAL						X	
BARS						X	
INPUTS							
SLIDEBAR	X						
DIAL		X					
MANUAL INPUT FIELD			X				
DYNAMIC PIPE					X		
DYNAMIC TANK	X	X	X				
COMPONENTS							
PICTORAL VLVS	X	X					
SCHEMATIC VLVS			X	X	X		
GOAL LIKE LOOK	X						
ALT COMPONENT ID'S		X					
UNIQUE COMPONENTS	X	X	X			X	
REALISTIC UMBILICAL		X					
SUB-DISPLAYS							
TRADITIONAL	X						
NEW		X	X				
FUNCTION DELINIATION		X					

- Showcase available CLCS capability for Demonstration purposes
 - Data Health
 - Data Fusion
 - System Viewers
 - Data Display/Plotting
 - Consolidated data

1.2.3 SLWT Display Development Performance Requirements

There are currently no performance requirements for SLWT displays.

1.2.4 SLWT Display Development Interfaces Data Flow Diagrams

